

SUPPORT FOR THE AMENDMENT

This Amendment cancels Claims 16, 18-22, 24-27, 29 and 32; amends Claim 28; and adds new Claims 33-34. Support for the amendments is found in the specification and claims as originally filed. In particular, support for Claim 28 is found in at least in canceled Claims 29 and 32. Support for new Claims 33-34 is found in the specification at least at page 5, lines 12-20, and page 8, lines 7-10. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 28, 30-31 and 33-34 will be pending in this application. Claim 28 is independent.

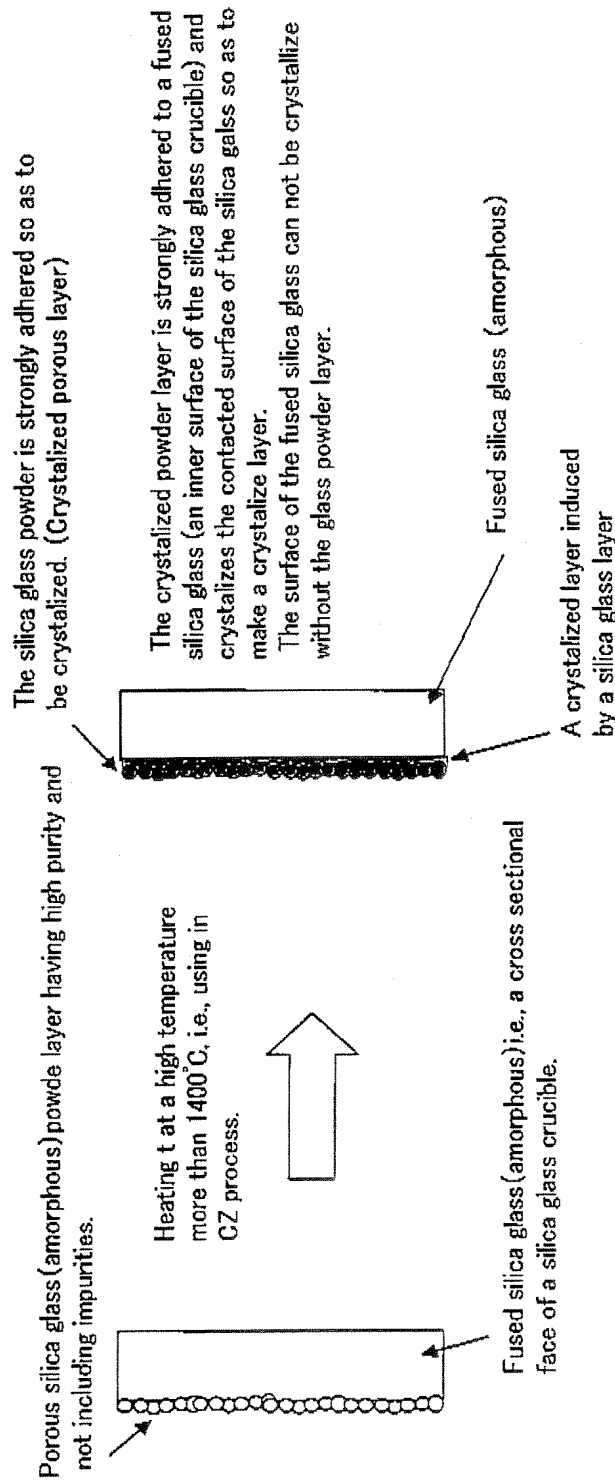
REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

Applicants thank the Examiner for the courtesies extended to their representative during the personal interview on September 13, 2007.

The silica glass crucible of the present invention has a structure that includes a porous silica glass powder layer on the surface of a fused silica glass crucible substrate. The production method for forming the silica glass powder layer is described in the specification at page 7, line 20 to page 8, line 10. The silica glass powder layer reinforces the silica glass crucible and prevents deformation at high temperatures. Specification at page 11, line 12 to page 12, line 2. The silica glass crucible of the present invention is shown in the attached Fig. 1.

Fig.1 Present invention products (JSQ Products)



Porous silica glass powder layer on the surface of the crucible is made by baking the surface of the crucible to be sintered at 1000 to 1300°C. This temperature range is below the crystallization temperature of the amorphous silica.

Products structure

Structure when using in CZ process

A cross sectional view of JSQ Crucible

Claims 16, 18-22 and 27-32 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,053,359 ("Loxley") in view of U.S. Patent No. 5,211,733 ("Fukao").

Loxley discloses a high-density silica glass article with excellent thermal shock characteristics is formed from a high purity vitreous silica containing an aluminum compound as a crystallization aid and having a dense concentration of cristobalite nuclei. The entire crucible can be crystallized during the initial melt down in a Czochralski furnace. Loxley at abstract. Loxley discloses that during crystal growing, the temperature below the melt line is above 1400°C and sufficient to complete the crystallization of the glass, but the uppermost portions of the crucible remain at temperatures below 1100°C and do not crystallize substantially. Loxley at column 15, lines 49-53.

However, Loxley fails to suggest a silica glass powder layer on a surface of a silica glass crucible. In particular, Loxley fails to suggest the independent Claim 28 limitations of a "silica glass crucible, wherein a silica glass powder layer is formed on the whole or a part of the surface of the crucible; the silica glass powder layer is porous; the silica glass powder layer is formed from a silica powder; ...".

Fukao fails to remedy the deficiencies of Loxley. The Final Rejection at page 3, section 4, lines 11-13, cites Fukao for disclosing that "it is known in the art to have silica with an alkali metal content below 1 ppm, preferably below 0.1 ppm".

Because the cited prior art fails to suggest all the limitations of independent Claim 28, the rejection under 35 U.S.C. § 103(a) should be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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